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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,781	09/29/2000	Hyun Ki Choi	P-133	2258

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EXAMINER

CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/672,781

Applicant(s)

CHOI ET AL.

Examiner

Charles Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/29/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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Detailed Action

Priority

1. Applicant claims foreign priority benefit using foreign application Korea 42,406/1999 as shown in declaration. However, the certified copy of the foreign priority is not received yet. A copy of the certified foreign priority is required. See MPEP 201.14 (b).
For this office action, the foreign priority is considered based on the priority date, 10/1/1999.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al. (US 6,181,283 B1).

Regarding **claim 1**, Johnson et al. (also as Johnson in below) discloses an antenna built-in type mobile phone (the removable combination battery and antenna assembly 16 for wireless communication device 12, title, abstract, figure in cover page; col. 3, line 13 to col. 4, line 19).

Johnson discloses a mobile phone main body (the phoneset 14 in Fig. 1-4, and col. 3, lines 31-38).

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Johnson discloses a battery detachably (battery assembly 16, Fig. 1-4) attached to the mobile phone main body (phoneset 14) and having an antenna at a predetermined portion therein (the dipole antennas, Z-shaped driven antenna element 110, on the battery assembly pack 16, Fig. 1-4). The antenna is at predetermined upper portion, as shown in his figures, summary of invention. Beside, Johnson discloses the patch antenna, thin antenna, as shown in Fig. 5, Fig.

Regarding **claim 3**, Johnson discloses the a dielectric substance or a space exists between the antenna and the battery cell (as shown in col. 4, line 51-64, Fig. 3, the dielectric layer 112, the radiation absorbing layer 116, in between serpentine antenna element 110 and the detachable assembly 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Miller (US 4,593,409).

In the above, it does not clearly indicate an antenna positioned within the battery cell.

Regarding **claim 2**, Miller teaches an antenna positioned at a predetermined portion within

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the battery cell (Miller teaches a two-way portable transceiver system 10 with removable battery pack and antenna 18, title, abstract, figure in cover page, summary of invention). The transceiver system 10 comprises a battery enclosure 20 (figure in cover page) with the antenna 18 positioned inside the battery enclosure 20 (col. 3, lines 22-23) such that the operable condition of the antenna could be warned to user (col. 1, lines 6-15; col. 2, lines 14-18), using the ser sensor 42 and power sensor 44. It is obvious to include Miller's technique for having the antenna packed inside the battery cell package, to Johnson's wireless comm. device 12, such that the system could be upgraded to operate efficiently with the functioning antenna having the malfunctioning detection method, SWR sensor 40 and power sensor 44. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Johnson's wireless comm. device 12 and to include Miller's antenna inside the battery cell package with the malfunctioning detection means, SWR sensor 40 and power sensor 44, such that the system could be upgraded to operate efficiently with the operable antenna.

Regarding a battery cell in a predetermined form, Johnson discloses the mobile phone comprising a battery cell in a predetermined form (as shown in Fig. 3, the battery 20 is in a predetermined form in the detachable assembly). Johnson discloses a battery pack (the detachable assembly 16 in Fig. 3) for holding the battery cell 20 and the serpentine antenna driven element 110 (col. 4, line 33 to col. 5, line 10; col. 6, line 52 to col. 7, line 3).

- 1, 2
5-6
4. Claims 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Miller, and further in view of Zakman-et-al. (US 4,903,326).

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In the above, it does not clearly indicate the antenna is positioned at an upper portion of the batter cell.

Regarding **claim (4)**, Zakman teaches the antenna is positioned at an upper portion of the batter cell (the antenna area 303 is in the upper portion, Fig. 3, of the battery cell 302, figure in cover page) for a detachable battery pack with built-in antenna (title, abstract, Fig. 3).

Zakaman considers the antenna is contained inside the battery housing to prevent the antenna from damage (abstract) for the miniature antenna (col. 1, lines 39-40). It is obvious.

to include Zakaman's antenna in the upper area 303 of the battery portion 102, to Johnson above, such that the antenna could be small and protected by the battery housing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Johnson's battery and antenna and include Zakman's antenna in the upper area 303 of the battery portion 102, to Johnson above, such that the antenna could be small and protected by the battery housing.

Regarding **claim 5**, Johnson discloses the antenna is positioned at a back side portion of the battery cell assembly 16, as shown above.

Regarding **claim 6**, Johnson discloses the side portion of the battery cell is the outer side of the battery, as shown above, figure in cover page, the dipole 72 is located on the outer side of the battery assembly 16.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Miller, and further in view of Harano (US 6,028,555).

In the above, it does not clearly indicate the many-fold wire for the antenna.

Regarding **claim 7**, Harano teaches the antenna is formed by a many-fold wire (a replaceable battery cover 3 has the bending conductor 31, Fig. 6, col. 4, lines 55-67), for improving the antenna characteristic and reducing antenna size of various antenna type (col. 1, line 59 to col. 2, line 3). Harano considers a better antenna with reduced size such as the one as shown in Fig. 6. It is obvious to include Harano's antenna having bending conductors 31 to improve antenna characteristic having small antenna size, to Johnson above, such that Johnson's antenna could be small and performed better. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Johnson above and to include Harano's antenna having bending conductor 31 to improve antenna characteristic for a small antenna, such that Johnson's antenna could be small and performed better.

Regarding the antenna is formed by a single wire, Johnson discloses the antenna is formed of a single wire having Z shape (as shown in Fig. 3, Fig. 4).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Miller, Harano, and further in view of Copeland et al. (US 5,218,371).

In the above, it does not clearly indicate the antenna is of oval shape.

Regarding **claim 8**, Copeland teaches the antenna is of oval shape (an antenna with oval shape, col. 6, lines 4-20; col. 6, lines 16-20; col. 7, lines 28-30, to enhanced field falloff,

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title). Copeland considers the controlling of the antenna radiation pattern (col. 1, lines 4-9) such that the antenna could exhibit enhanced field falloff, with controlled radiation pattern (col. 2, lines 30-34). Copeland teaches the oval antennas with controlled radiation pattern falloff. It is obvious to include Copeland's oval antenna with controlled radiation pattern, to Johnson above, such that the radiation pattern from antenna could be efficiently controlled by using Copeland suggested oval antenna. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Johnson's above and to include Copeland's oval antenna with controlled radiation pattern, such that the radiation pattern from antenna could be efficiently controlled by using Copeland suggested oval antenna. Regarding the antenna is of linear, zigzag, Johnson has shown above in Fig. 3, the antenna element 110 is having linear portions for the zigzag overall shape.

7. Claims 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Miller, Zakman, and further in view of Copeland.

Regarding **claim 9**, referring to examiner's comment in claims 1, 4, above, from Johnson, Zakman, for an antenna built-in type mobile telephone, wireless communication device 12 having main body (phoneset member 14); an antenna detachably (16, 20) attached to the mobile wireless comm. device 12; an antenna 110 is positioned adjacent to the battery cell 20 (fig. 3); a battery cell 20; a battery pack (16) for holding the battery cell 20 and the antenna 110 (Fig. 2-4).

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Regarding **claim 10**, referring to examiner's comment in claims 9, 3 above, for the dielectric substance or space.

Regarding **claim 11**, referring to examiner's comment in claims 9, 4 above, for the antenna is positioned at an upper portion.

Regarding **claim 12**, referring to examiner's comment in claims 9, 6 above, for the outer side portion.

Regarding **claim 13**, referring to examiner's comment in claims 9, 7 above, for the single or many-fold wire.

Regarding **claim 14**, referring to examiner's comment in claims 1, 2, 9, above, for a battery of a mobile wireless comm. device 12; a battery cell 20; an antenna electrically connected with main body of the mobile two-way portable transceiver system 10 (Miller); and antenna is implemented at a predetermined upper portion or position which is adjacent to the battery cell (Johnson, Miller, Zakman); a battery pack holding the battery cell and the antenna therein (Miller).

Regarding **claim 15**, referring to examiner's comment in claims 14, 3 above, for the dielectric substance or space.

Regarding **claim 16**, referring to examiner's comment in claims 14, 4 above, for the antenna is positioned at an upper portion.

Regarding **claim 17**, referring to examiner's comment in claims 14, 5 above, for the antenna is positioned at the side back portion of the battery cell.

Regarding **claim 18**, referring to examiner's comment in claims 14, 6 above, for the outer side surface of the battery.

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Regarding **claim 19**, referring to examiner's comment in claims 14, 7 above, for the single or many-fold wire for the antenna.

Regarding **claim 20**, referring to examiner's comment in claims 14, 8 above, for the linear, zigzag shape for the antenna.

Conclusion

8. In the above disclosure, Johson discloses the wireless communication device 12 having detachable battery assembly 16. The battery assembly 16 has the antenna element positioned in the upper, outer, side portion of the battery assembly 16 which contains the battery cell 20. Johnson discloses the zigzag antenna driven element 110 with linear wire conductor, Fig. 1-5.

Miller teaches the technique for having the antenna packed inside the battery cell package such that the system could be upgraded to operate efficiently with the functioning antenna having the malfunctioning detection method, SWR sensor 40 and power sensor 44.

Zakman teaches the antenna in the upper area 303 of the battery portion 102, such that the antenna could be small and protected by the battery housing.

Harano teaches the antenna having bending conductors 31 to improved antenna characteristic for small antenna.

Copeland teaches the oval antenna with controlled radiation pattern, such that the radiation pattern from antenna could be efficiently controlled by using Copeland suggested oval antenna.

9. The cited pertinent prior arts are listed below:

A. US 5,649,306, July Vannatta et al. teaches the portable radio housing having diversity

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antenna (figure in cover page, abstract). In Fig. 3, fig. 4, Vannatta considers the patch antenna element 59 is positioned in the battery package.

B. JP 01,274,519A, November 1989, Namiki teaches the battery pack with external antenna connector which can be removably detached from the portable radio telephone (title, Fig. 1-5; abstract in page 1).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


Charles Chow

March 07, 2003.